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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,001	09/18/2003	Cary Lee Bates	ROC920030177US1	6640
7590 Grant A. Johnson IBM Corporation, Dept. 917 3605 Highway 52 North Rochester, MN 55901-7829			EXAMINER KHATRI, ANIL	
			ART UNIT 2191	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	DELIVERY MODE
3 MONTHS			12/21/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/667,001

Applicant(s)

BATES ET AL.

Examiner

Anil Khatri

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9/18/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: “*Managing Breakpoints In a Multi-Threaded Environment*”

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-55 are rejected under 35 USC 101 because they disclose a claimed invention that is an abstract idea as defined in the case *In re Warmerdam*, 33, F 3d 1354, 31 USPQ 2d 1754 (Fed. Cir. 1994).

Analysis: Claims 1-55 are disclosed by the applicant as being a “stopping execution of program at a breakpoint...”. Since the claims are each a series of steps to be performed on a computer the processes must be analyzed to determine whether they are statutory under 35 USC 101.

Examiner interprets that claims 1-55 are non-statutory because they do not disclose that how a method and apparatus will stop execution, determine whether to stop execution, determination is true, applying an attribute to all breakpoints, when executed on the process, deciding whether to allow the program without incorporating the processing and execution of the program, steps in carrying the execution and method for setting up the breakpoints. Applicant submits no

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substance so its functionality can be realized. Thus, claims 1-55 does not produce any tangible and useful results and claims 1-55 are non-statutory and rejected under 35 USC 101.

Examiner interprets that claims 11-15, 31-33 and 49-52 are "signal bearing medium encoded with instructions..." are not limited to tangible embodiments. Claim 11-15, 31-33 and 49-52 are not limited to tangible embodiments. In view of Applicant's disclosure, specification page 9 lines 3-20 the medium is not limited to tangible embodiments, instead being defined as including both tangible embodiments (e.g., [computer readable medium]) and intangible embodiments (e.g., [transmission media, radio frequency (RF), infrared (IR), a carrier wave, telephone line, a signal, etc.]). As such, the claim is not limited to statutory subject matter and is therefore non-statutory. To overcome this type of 101 rejection the claims need to be amended to include only the physical computer media and not a transmission media or other intangible or non-functional media. For the specification at the bottom, carrier medium and transmission media would be not statutory but storage media would be statutory.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Regarding claims 26-30, the word "means" is preceded by the word(s) "for applying an attribute to a plurality of breakpoints in a breakpoint group wherein the attribute..." in an attempt to use a "means" clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the word(s) preceding "means," it is impossible to

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determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-25, 34-37 and 53-55 are rejected under 35 U.S.C. 102(b) as being anticipated by *Serra et al* USPN 6,226,787

Regarding claim 1

Serra et al teaches,

stopping execution of a program at a breakpoint based on a previous value of a variable (see abstract, line 21-27, The user may..., column 3, lines 33-36).

Regarding claim 6

Serra et al teaches,

means for saving a plurality of values of a variable after a respective plurality of encounters of a breakpoint by a program that modifies the variable (column 7, lines 19-35, “the call... overload calls”);

means for stopping execution of the program at the breakpoint based on one of the plurality of values (see abstract, line 21-27, The user may..., lines 33-36).

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Regarding claim 11

Serra et al teaches,

saving a plurality of values for a variable specified by a condition after respective plurality of encounters of a breakpoint by a program that modifies the variable (column 11, lines 4-19, the data structure... synchronization); and

determining whether to stop execution of the program at the breakpoint based on one of the plurality of the values (column 11, lines 20-40, “in the decision step... at step 190).

Regarding claims 16, 34 and 53

Serra et al teaches,

a processor (figure 1); and

a storage device encoded with instructions, wherein the instructions when executed on the processor comprise (figure 1, column 2, lines 51-63):

saving a plurality of values for a variable specified by a condition after a respective plurality of encounters of a breakpoint by a program that modifies the variable (column 11, lines 4-19, the data structure... synchronization);

determining whether to stop execution of the program at the breakpoint based on one of the plurality of the values (column 11, lines 20-40, “in the decision step... at step 190). , and

if the determining is true, stopping execution of the program at the breakpoint (column 3, lines 33-37, “breakpoint at particular node... is to continue).

Regarding claim 21

Serra et al teaches,

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Applying an attribute to all of plurality of breakpoints in a breakpoint group (column 5, lines 38-55, "the second group of...special speed).

Regarding claims 2-4

Rejection of claim 1 is incorporated and further claims 2-4 recites limitations as in claim 1, thus claims 2-4 are rejected under same rational.

Regarding claims 7-10

Rejection of claim 6 is incorporated and further claims 7-10 recites limitations as in claim 6, thus claims 7-10 are rejected under same rational.

Regarding claims 12-15

Rejection of claim 11 is incorporated and further claims 12-15 recites limitations as in claim 11, thus claims 12-15 are rejected under same rational.

Regarding claims 17-20, 35-37 and 54-55

Rejection of claims 16, 34 and 53 are incorporated and further claims 17-20, 35-37 and 54-55 recites limitations as in claims 16, 34 and 53 thus claims 17-20, 35-37 and 54-55 are rejected under same rational.

Regarding claims 22-25

Rejection of claim 21 is incorporated and further claims 22-25 recites limitations as in claim 21, thus claims 22-25 are rejected under same rational.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 26-33 and 38-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Serra et al* USPN 6,226,787 is taken with *DaSilva et al* USPN 6,493,868.

Regarding claim 26

Serra et al teaches,

means for applying an attribute to a plurality of breakpoints in a breakpoint group(column 5, lines 38-55, “the second group of...special speed). *Serra et al* does not teach explicitly wherein the attribute comprises data that impacts whether a program halts upon encountering the plurality of breakpoints or continues to execute. However, *DaSilva et al* teaches (column 8, lines 55-57, “the program... in yellow”, column 9, line 15). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to incorporate halt operation in debugging the code. The modification would have been obvious because one of ordinary skill in the art would have been motivated to combine teaching into debugging process by applying breakpoints with halt in the group to test the application effectively at run time and visualize at the same time.

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Regarding claim 31

DaSilva et al teaches

determining whether a plurality of old conditions exist for a plurality of respective breakpoints in a breakpoint group (column 17, lines 42-47, “every conditional breakpoint...); and

applying a new condition to each of the plurality of breakpoints if the each of the plurality of old conditions exists (column 17, lines 4-24, “debug breakpoints... now is enabled).

Regarding claims 38, 44 and 49

Serra et al teaches,

determining whether to allow the program to continue executing based on a thread (column 3, lines 33-37, “breakpoint at particular node... is to continue). *Serra et al* does not teach explicitly detecting that a program encountered a breakpoint. However, *DaSilva et al* teaches, (column 15, lines 62-67, “the sue of breakpoints...”, column 16, lines 1-23”).

Regarding claims 27-30

Rejection of claim 26 is incorporated and further claims 27-30 recites limitations as in claim 26, thus claims 27-30 are rejected under same rational.

Regarding claims 32-33

Rejection of claim 31 is incorporated and further claims 32-33 recites limitations as in claim 31, thus claims 32-33 are rejected under same rational.

Regarding claims 39-43

Rejection of claim 38 is incorporated and further claims 39-43 recites limitations as in claim 38, thus claims 39-43 are rejected under same rational.

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Regarding claims 45-48

Rejection of claim 44 is incorporated and further claims 45-48 recites limitations as in claim 44, thus claims 45-48 are rejected under same rational.

Regarding claims 50-52

Rejection of claim 49 is incorporated and further claims 50-52 recites limitations as in claim 49, thus claims 50-52 are rejected under same rational.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anil Khatri whose telephone number is 571-272-3725. The examiner can normally be reached on M-F 8:30-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Zhen can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


ANIL KHATRI
PRIMARY EXAMINER